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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,730	02/21/2006	Thorgeir Jonsson	6244-000002/US	8750
30593 7590 09/11/2007 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			EXAMINER ALAVI, ALI	
			ART UNIT 2875	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/532,730

**Applicant(s)**

JONSSON ET AL.

**Examiner**

Ali Alavi

**Art Unit**

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/05, &amp; 8/05</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 9, 10, 12, 13, 14, 15, 16, 17 and 18 are rejected under 35

U.S.C. 102(e) as being anticipated by Ryan (US 6,964,501).

Regarding claim 1, Ryan discloses a light illuminating device comprising: at least one light emitting diode (array LED, 10), at least one thermoelectric module (TEM, 6, fig. 1) having a first surface which is thermally connected to the LED, a heat sink (5, fig. 1) thermally connected to a second surface of the at least one TEM, a thermally insulating (7, fig. 1, col. 6, line 66) cover creating an enclosed chamber substantially insulating the LED from ambient air.

Regarding claim 4, Rayan further teaches that the TEM is configured such that the operating temperature of the LED(s) is lower than or about the same as the ambient temperature surrounding the device (col. 8, lines 36-40).

Regarding claim 9, Rayan further teaches that a plurality of LEDs (array 10).

Regarding claim 10, Rayan further teaches a plurality of TEMs (TEMs 6).

Regarding claims 12-13, Rayan further teaches that the enclosed chamber has a higher pressure than ambient pressure during normal operation (col. 2, lines 40-42).

Regarding claims 14-15, Rayan further teaches e device of Claim 1, further comprising a control unit for controlling the TOC, and one sensor (9, fig. 1) connected to the control unit for sensing one or more environmental parameters, wherein the control unit is configured to adjust the Toc based on parameters measured by the one sensor.

Regarding claim 16, Rayan further teaches said one or more sensors comprise a sensor for measuring emitted light from the LED(s).

Regarding claim 17, Rayan further teaches is operated with pulsed current to the one or more LEDs (col. 6, line 20).

Regarding claim 18, Rayan further teaches is configured for an application selected from traffic light, illuminated roadway and/or emergency signs, airport runway lights, vehicle lights including brake lights (col. 1, lines 15-20).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan in view of Upadhye et al (US 2004/0194470) \*\*\*.

Ryan teaches the claimed invention except for the TEMs being in a stacked fashion. Upadhye teaches that the TEMs can be stacked together in order to increase heating or cooling of the unit. Therefore, it would have been obvious to one of ordinary skill in the art to stack the TEMs in order to increase cooling of the TEMs module.

Claims 2-3, 5-8, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan in view of Yoneda et al (US Pat. No 6,832,849).

Ryan teaches the claimed invention but doesn't explicitly teach that the at least one TEM is configured such that the device is operated by running a TEM-operating current (TOC) through the TEM, which current is less than 20% of the maximum operating current for the TEM, thereby preventing a decrease in light output due to an increase of the temperature of the LED(s), or operated by running a TOC through the TEM, which current is less than 15% of the maximum operating current for the TEM, or at least one TEM is in the range of 200-600 mA. However, Ryan teaches that through the utilization

of TEMs, thermal transfer from cool side to hot side can be controlled by controlling a current supplied to the TEMs. Additionally, Yoneda et al teach that a peltier element current controlling section in fig. 22, that controls the electric current of the peltier element 10 so that the sensed temperature of the substrate may coincide with target temperature and the substrate temperature is maintained at all time. Therefor, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the electric current supply to the TEMs in order to obtain high light output at a controlled temperature as taught by Yoneda.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Ali Alavi** whose telephone number is **(571) 272-2365**. The examiner can normally be reached between 7:00 A.M. to 5:30 P.M. Tuesday to Friday. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Sandy O'Shea can be reached at (571) 272-2378 or you may fax your inquiry to the **Central Fax at (571) 273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AA

/Ali Alavi/

Primary Examiner